

## **DETAILED ACTION**

### ***Response to Arguments***

- 1. Applicant's arguments filed 09/22/2009 have been fully considered but they are not persuasive.**

On pages 9 and 10 of the remarks, in regard to the Specification, the applicant submits that a new, compliant abstract has been filed. In addition, the applicant submits that section headings are not required according to MPEP §608.01 (a). The examiner respectfully disagrees. The examiner checked the new abstract for compliance, and a word count using a word processor yielded a total of 197 words. This total still exceeds the maximum allotted total of 150. The examiner respectfully requests that the applicant correct this matter. In regard to section headings, the examiner kindly directs the applicant to 37 CFR 1.77(b). Upon review of the specification, the examiner believes the recommended section headings can be added without undue burden to the applicant and asks that they be added.

- 2. Applicant's arguments with respect to claims 1, 2, and 11 have been considered but are moot in view of the new ground(s) of rejection.**

### ***Specification***

- 3. Applicant is reminded of the proper language and format for an abstract of the disclosure.**

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

**4. The abstract of the disclosure is objected to because it exceeds 150 words.**

Correction is required. See MPEP § 608.01(b).

**5. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.**

**Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

***Claim Rejections - 35 USC § 102***

**6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**7. Claims 1, 2, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Radulescu et al. (US PG Pub 2006/0041889).**

**The applied reference has a common assignee with the instant application.**

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

**8. As per claim 1, Radulescu et al. teach a data processing circuit contained on an integrated circuit comprising:**

a network (12) contained on the integrated circuit, that is operable in successive time-slots [Radulescu, paragraph 0001, "The invention relates to an integrated circuit having a plurality of processing modules and a network arranged for providing

connections between processing modules and a method for exchanging messages in such an integrated circuit", The network is contained entirely on an integrated circuit.];

a plurality of data processing units (10) contained on the integrated circuit, interconnected by the network (12) [Radulescu, paragraph 0036, "Therefore, and integrated circuit comprising a plurality of processing modules M; I; S; T and a network N", The network is composed of processing units.], and arranged to send streams of messages concurrently through the network (12) [Radulescu, "Said connection supports transactions comprising outgoing messages from the first module to the second module and return messages from the second module to the first module", The connections support streaming communications.], each stream comprising messages that occupy shareable resources (20) in the network (12) in a periodically repeating selection of successive time-slots, a period of repetition (P) being the same for all the streams [Radulescu, paragraph 0098, "In the network, throughput can be reserved for connections in a time-division multiple access (TDMA) fashion, where bandwidth is split in fixed-size slots on a fixed time frame ", The TDMA protocol allows for time-slot communications, which are fixed in size.];

node circuits (22) in the network (12), the node circuits (22) being arranged to forward the messages along multi-node paths through the network (12), each particular stream being assigned a respective stream specific path along which the node circuits (22) forward all messages of the particular stream [Radulescu, paragraph 0061, "An example for the use of differential properties for the outgoing and return parts is described as follows. Guaranteed-throughput connections can overbook resources in

some cases. For example, when an ANIP opens a guaranteed-throughput read connection, it must reserve slots for the read command messages, and for the read data messages. The ratio between the two can be very large (e.g., 1:100), which leads either to a large number of slots, or bandwidth being wasted for the read command messages". Each node circuit is allotted buffer space which allows for message forwarding of each particular stream.], the node circuits (22) being arranged to decide whether to forward or discard each message dependent on a measure of seniority of the message in its particular stream, each particular node circuit (22) being arranged to prevent forwarding of a more junior message in the particular stream for which insufficient resources (20) are left because of forwarding of a more senior message from another stream from the particular node circuit (22) [Radulescu, paragraph 0062, "To solve this problem, the connection properties of the request and response parts of a connection can be configured independently for all of throughput, latency and jitter. Consequently, the connection properties of request part of a connection can be best effort, while the connection properties of response can have guaranteed throughput (or vice versa). For the example mentioned above, we can use best effort read messages, and guaranteed-throughput read-data messages", Forwarding or throughput, is prioritized for senior messages (guaranteed-throughput read-data messages) compared to all other messages.].

9. **As per claim 2**, Radulescu et al. teach a data processing circuit according to claim 1. Radulescu et al. also teach wherein at least one of the node circuits is arranged to send back a confirmation of successful forwarding of a message from an

initial part of a particular stream up to said at least one of the node circuits [Radulescu, paragraph 0071, "A return data message (RETDATA) is sent by a PNIP as a consequence of a transaction execution that produces data (e.g., read, and test-and-set)", A return, confirmation is sent from the node circuit.], at least a further one of the node circuits (22) being arranged to forward a subsequent message from the particular stream only after timely reception of the confirmation [Radulescu, paragraph 0081, "A transaction with a response (e.g. an acknowledged write) is said to be complete when a RETSTAT message is received from the ANIP. Recall that when data is received as a response (RETDATA), a RETSTAT (possibly implicit) is also received to validate the data", The arrival of the message indicates successful reception and allows for more data to be transmitted (see paragraphs 0065 & 0066).].

10. **As per claim 11**, Radulescu et al. teach a method of processing data in a circuit that contains a plurality of data processing units (10) interconnected by a network (12) of node circuits (22) [Radulescu, paragraph 0001, "The invention relates to an integrated circuit having a plurality of processing modules and a network arranged for providing connections between processing modules and a method for exchanging messages in such an integrated circuit", The network is contained entirely on an integrated circuit.], the node circuits (22) using successive time slots to forward messages along transmission paths between pairs of the data processing units (10) [Radulescu, paragraph 0061, "An example for the use of differential properties for the outgoing and return parts is described as follows. Guaranteed-throughput connections can overbook resources in some cases. For example, when an ANIP opens a

guaranteed-throughput read connection, it must reserve slots for the read command messages, and for the read data messages. The ratio between the two can be very large (e.g., 1:100), which leads either to a large number of slots, or bandwidth being wasted for the read command messages". Each node circuit is allotted buffer space which allows for message forwarding of each particular stream.], using resources (20) that the network (12) allows to be shared between different paths on a time slot multiplexing basis [Radulescu, paragraph 0098, "In the network, throughput can be reserved for connections in a time-division multiple access (TDMA) fashion, where bandwidth is split in fixed-size slots on a fixed time frame ", The TDMA protocol allows for time-slot communications, which are fixed in size.], the method comprising:

starting streams of messages, each from a respective source data processing unit (10a) to a respective destination data processing unit (10b) [Radulescu, "Said connection supports transactions comprising outgoing messages from the first module to the second module and return messages from the second module to the first module", The connections support streaming communications.], each stream comprising messages that occupy the resources in a periodically repeating selection of time-slots, the period of repetition being the same for all the streams [Radulescu, paragraph 0098, "In the network, throughput can be reserved for connections in a time-division multiple access (TDMA) fashion, where bandwidth is split in fixed-size slots on a fixed time frame ", The TDMA protocol allows for time-slot communications, which are fixed in size.];

forwarding all the messages of the particular stream through the network (12) along the node circuits (22) in a stream specific path assigned to the particular stream, the node circuits (22) deciding to forward or discard each message dependent on a measure of seniority of the message in its particular stream, each particular node circuit (22) preventing forwarding of a more junior message for which insufficient resources are left because of forwarding of a more senior message from the particular node circuit [Radulescu, paragraph 0062, "To solve this problem, the connection properties of the request and response parts of a connection can be configured independently for all of throughput, latency and jitter. Consequently, the connection properties of request part of a connection can be best effort, while the connection properties of response can have guaranteed throughput (or vice versa). For the example mentioned above, we can use best effort read messages, and guaranteed-throughput read-data messages", Forwarding or throughput, is prioritized for senior messages (guaranteed-throughput read-data messages) compared to all other messages.].

### ***Conclusion***

11. **Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.** Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not



mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.**

The reference, Goossens (US PG Pub 2006/009520), teaches a similar system to the one disclosed in the rejections.

The reference, Radulescu et al. (US PG Pub 2006/0041888), teaches a similar system to the one disclosed in the rejections.

The reference, Calvignac et al. (US PG Pub 2002/0191642), teaches a communication between components in a network processor.

**13. The Examiner has cited particular columns and line numbers or paragraphs in the references applied to the claims above for the convenience of the applicant.** Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, the Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

**14. If the Applicant is of the opinion that an interview would help advance prosecution in this case, they are welcome to call the Examiner, Paul Masur, at the number listed below to schedule an interview.** The Examiner prefers interview requests be accompanied with a detailed agenda via fax. The Examiner's fax number is (571) 270-8297. The Examiner is willing to consider proposed amendments, clarify rejections, and discuss any other issues that are presented by the Applicant. Please note that the Examiner may not be able to accommodate all requests due to scheduling constraints. It is recommended that interview requests be sent with ample time to schedule an interview.

**15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Masur whose telephone number is (571) 270-7297.** The examiner can normally be reached on Monday through Friday from 7:00AM to 4:30PM (Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/  
Supervisory Patent Examiner, Art Unit 2464

/P. M./  
Examiner, Art Unit 2464